Ham-Space Digest   Sun, 12 Dec 93   Volume 93 : Issue 107

Today's Topics:
                    Dealing with Doppler Shift?
                     Free Radio Bands Questions
                     Mode-A Questions (2 msgs)
             SatTrack --- Unix satellite tracking program
                   Some satellite tracking questions
                    Two-Line Element Set Questions

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 10 Dec 1993 11:42:39
From: noc.near.net!lard.ftp.com!wabi.ftp.com!kerskine@uunet.uu.net
Subject: Dealing with Doppler Shift?
To: ham-space@ucsd.edu

In article <2e9vkd$8jr@oak.oakland.edu> prvalko@vela.acs.oakland.edu (prvalko)
writes:

>The way I understand it, one uses the satellites such that the LOWER
>frequency never gets adjusted. i.e. on RS-10/11 you tune the 145
>transmitter so that the 29 MHz receive frequency stays put.

That's right. If you start moving your downlink frequency on your receiver,
not only do you create a lot of frustration, but you can interfere with other
QSOs

73...Keith - KA1RHO

Date: Sat, 11 Dec 1993 15:43:30 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!emory!kd4nc!ke4zv!
gary@network.ucsd.edu
Subject: Free Radio Bands Questions
To: ham-space@ucsd.edu

In article <CHrzHw.Bp9@murdoch.acc.Virginia.EDU> mb7s@fermi.clas.Virginia.EDU
(Mikhail Boukhny) writes:
>Someone has asked me recently what if he wants to build a competing network
>for cellular phones. Are there any gaps yet in the bandwidth? Whom should he
>ask to? Federal Communication Commission? Any information would be appreciated.

The FCC allocated two systems per service area, 400 channels each. One goes
to the wireline carrier, and the other goes to the non-wireline carrier. All
of the urban systems have been allocated and built, and the last RSA, rural
service area, is being built out now east of the Mississippi. There might be
a slot available in Idaho or Utah that isn't filled yet, but I doubt it.

There's a new service, PCS, that's a sort of micro-cellular system on
new frequency allocations in the 1.8 GHz area. The FCC plans to hold
an *auction* to sell allocations for this service. If you had a *lot*
of money, you might be able to get in on this.

Gary
--
Gary Coffman KE4ZV | I kill you, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | You kill me, | uunet!rsiatl!ke4zv!gary
534 Shannon Way | We're the Manson Family | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -sorry Barney |

Date: Sat, 11 Dec 1993 15:57:06 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!emory!kd4nc!ke4zv!
gary@network.ucsd.edu
Subject: Mode-A Questions
To: ham-space@ucsd.edu

In article <CHruyt.Ktx@rd1.InterLan.COM> tavernin@sun1.interlan.com (Victor
Tavernini) writes:
>
>I have a couple of questions about Mode-A on RS-10/11 and RS-12/13 ...
>
>1. Is a 10M preamp usually necessary?

If you have a late model transceiver, no. Only if you have an older
radio whose sensitivity falls off on 10 meters is a preamp necessary.
With good coax, line loss will be negligible.

>2. Is CW used at all on this mode ... or does SSB predominate?

Morse is probably at least as common as SSB on this satellite.

>3. How much power do I need on the uplink and what type of antenna?

An ERP in the 50-500 watt range is fine, with lower values almost always
sufficient. You don't want to be stronger than the beacon. How you get
that ERP, whether by transmitter power or antenna gain is your choice.
If you already have a beam for other satellites, you can use that. Or
you can pump out 100 watts into an omni antenna and do fairly well.

>4. Is it practical at all to key the mike, of an FM rig, to produce CW
>   for the uplink?

Sometimes with some radios, if you key relatively slowly. Usually you'll
want to go into the radio and arrange to key the driver stage instead.
That'll allow the oscillator to run continously rather than waiting for
PLL lockup, leave the transmitter stabilized at power, and avoid the
TR delay. Of course disconnect the mike when using Morse or you'll have
room noise being transmitted.

Gary
--
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534 Shannon Way | We're the Manson Family | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -sorry Barney |

Date: Thu, 9 Dec 1993 10:59:54
From: ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!noc.near.net!
lard.ftp.com!wabi.ftp.com!kerskine@network.ucsd.edu
Subject: Mode-A Questions
To: ham-space@ucsd.edu

Victor,

Here are some answers based on my experiences (and may be helpful to others)

>1. Is a 10M preamp usually necessary?

While a pre-amp might be handy for low horizon passes, I never had a problem

listening to my downlink on either a dipole, or my 10m Ringo Ranger.

>2. Is CW used at all on this mode ... or does SSB predominate?

On RS-10, I'd say its 60% SSB, 40% CW. Sometimes people will initiate a
contact with SSB and finish with CW when it's close to LOS

>3. How much power do I need on the uplink and what type of antenna?

Remembering that you only use enough power as necessary (which is especially
true with Satellite transponders), I've made successful contacts on SSB with
10 watts into a 1/4 ground plane!

>4. Is it practical at all to key the mike, of an FM rig, to produce CW
>   for the uplink?

Don't know on this question, but I've heard that it can be done.

Regards...Keith - KA1RHO

Date: 8 Dec 1993 00:24:08 GMT
From: sdd.hp.com!vixen.cso.uiuc.edu!howland.reston.ans.net!agate!
usenet@network.ucsd.edu
Subject: SatTrack --- Unix satellite tracking program
To: ham-space@ucsd.edu

SatTrack V1.7 re-Release

A while back I released the version 1.7 of the satellite tracking
program I've written for Unix machines. I hope most of the bugs have been
found (at least the remaining ones ought to be of minor impact). You can get
SatTrack from ucsd.edu (128.54.16.1). Do the following:

    ftp ucsd.edu
    login anonymous
    password: YOUR_EMAIL_ADDRESS
    cd hamradio/packet/tcpip/incoming
    get sattrack.V1.7.tar.Z

Place this file into your Unix home directory, uncompress it, and then
type 'tar xvpf sattrack.V1.7.tar'. This will unbundle the distribution file
and create all subdirectories that are necessary. Then look into the
documentation file 'sattrack.doc' in SatTrack/Doc for instructions how to
compile sattrack (and some other auxiliary programs). Please let me know how
it works and if there are any bugs that I haven't encountered yet. It should

compile perfectly on at least Sun-3's (SunOS 4.0.3) and SPARCstation IPCs
(SunOS 4.1.1). Some machines require stdlib.h to be included. In this case
comment out the line

    #define SUNOS4

in sattrack.h before compilation. There is a fix to be made to the shell
script 'getElementSets' for the anonymous FTP access of two-line orbital
elements, however: a 'dash' needs to be put in front of your login name,
as shown below. Also, I believe the Internet address has changed. The new
one below is known to work fine.

    cd $HOME/SatTrack/Data
    ftp -n 129.92.1.66 << !
    user anonymous -manfred@isi5.ssl.berkeley.edu
    cd /pub/space
    get tle.new
    quit
    !
    cp tle.dat tle.bak
    mv tle.new tle.dat

In the meantime I have been working on various updates. My current version
is V1.11, but this has not been tested fully yet. The next version to be
released (V2.0) will have implemented (amongst a few extra features) the
NORAD SGP4/SDP4 code for precision tracking. I hope this will be ready and
tested early next year.

73, Manfred --- W6/DL5KR

Manfred Bester
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Date: Sat, 11 Dec 1993 15:46:23 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!emory!kd4nc!ke4zv!
gary@network.ucsd.edu
Subject: Some satellite tracking questions
To: ham-space@ucsd.edu

In article <CHrr26.H6A@cbnewsh.cb.att.com> wa2sff@cbnewsh.cb.att.com
(joseph.e.wilkes) writes:
>What are people's opinions on the following:

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>
>1)  What is a good satellite tracking program?
>
>I have been evaluating traksat and I am close to sending in
>my registration fee.
>I have also seen ads for Instanttrack from AMSAT and Realtrak
>from R Meyers.  Are either of these two better and why?
>Should I have more than one, if so why?

IT is the way to go. Not only is it a neat program, but the revenues
from it go directly into the AMSAT satellite fund. It's a primary
fundraiser for the amateur satellite community. Buy a copy.

Gary
--
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Destructive Testing Systems | You kill me,             | uunet!rsiatl!ke4zv!gary
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Lawrenceville, GA 30244     |          -sorry Barney   |


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Date: Fri, 10 DEC 93 23:54:58 EST
From: noc.near.net!news.delphi.com!usenet@uunet.uu.net
Subject: Two-Line Element Set Questions
To: ham-space@ucsd.edu

Your message on two-line element set questions was very informative. Where can
one find more information about the SGP4 orbital model and algorithms for
computing satellite positions based on this model?
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Dave Hartrum
hartrum@delphi.com or 71664.1743@compuserve.com


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